Plates 1, 5, 9, 15, 17, 36 and 50, representing the smaller ferns, and plates 10, 13, 31, 35, 40 and 52, representing the larger growing species, seem to possess superior excellence. In fact many of the plates of this book would be eagerly seized upon by the virtuoso if met with among a collection of etchings, as a great prize. Mr. Williamson is a man who does this work, not because he desires to emulate the work of eminent botanists, but because the ability to do it is in him and he can but allow it to manifest itself. Mr. Williamson's occupation and circumstances are such that he does not possess the leisure time which is often at the command of the amateur to spend upon the work he so much enjoys, making the result so much the more to be wondered at.

The volume before us is dedicated to a mutual friend of the author and the present writer, and it is with unfeigned pleasure that the latter commends the author's taste in selecting one to honor who, like himself, works against surroundings for the love of the branch of science in which he labors.

As the number of species represented is about one half of the known ferns of the country, and a second volume would include all, it makes the price of the volume, which is $7.50, very much less in proportion than is charged for the works usually met with occupying the same field, thus bringing it within the limit of many more persons than is generally the case.

It is to be hoped that the sales of this volume will be such as to warrant the completion of the work, and if such should be the case the public, and pteridologists particularly, would have a rare volume if Mr. Williamson succeeded in carrying it as far beyond the present one as this is superior to his first book, "Ferns of Kentucky," which, judging from his work thus far, he may do.—John Robinson.

Tension in an Oak.—Near New Birmingham, Ohio, is a good sized White Oak which furnishes so good an illustration of the tension of tissues that it is worth while noting. The tree had been cut into on one side, just fairly into the sap wood, and then left. Being exposed to a heavy wind it was so bent away from the cut side that the slab split up the tree some ten feet, its cut end slipping entirely out of its former resting place. The connection above was perfectly retained and hence the slab continued to live, projected at a small angle from the tree. The lower end, after slipping out from its support, has so elongated that it is now nearly two inches too long to occupy its former position. There has also been a healing up and barking over

of the cut end so that the overlapping seems to be exaggerated. In a young and growing plant if the pith and woody zone are separated the former will elongate and the latter contract and hence make quite an obvious difference. But elasticity is diminished in the older and more established parts of a plant, and to have such a difference between the layers of forming and permanent tissue in the wood is more than I looked for.—J. M. C.

Fourteen Weeks in Botany by Alphonso Wood, A. M., and J. Dorman Steele, Ph. D. (A. S. Barnes & Co., 1879).—The parts of Steele's "Fourteen-Weeks" series have not been remarkable for their accuracy of statement nor for peculiar aptness of presentation and the present volume fully sustains the reputation of its predecessors. We are not told whether the plan of the work was originated by Prof. Wood or Dr. Steele or whether it was produced by the combined wisdom of the authors. Certainly in its use they lay the book open to very severe criticism. Instead of presenting the subject in a logical way, the pupil is introduced at once to *Polytrichum commune* and *Bartramia pomiformis*, two mosses, under each of which is a very meager description. Following these are lessons on *Polypodium* and *Osmunda* in the order which is pursued throughout the book, Description, Analysis, Name, Classification with a list of terms defined in the section and with them the Cryptogams are dismissed. Seventy plants are thus described and from these, with an utter lack of treatment in any general way, a pupil is expected to obtain an idea of the science of botany. The technical terms, being defined only as they are needed in speaking of a particular species, are of course presented without any regard to their correlation. We take a list of these at random. "Aestivation, Albumen, Centripetal inflorescence, Herbaceous, Imbricated, Introrse, Opposing stamens, Pedicel, Pyxis, Quincuncial, Raceme, Rachis, Sessile, Tuber." (p. 43.) But we are told in the preface that the book "is not designed for infants; the rather for learners capable of thought and reason." Now is there any *reason* in thus mixing things in order to present them to learners "capable of thought and reason"?

Not content with veinlet, on page 21 we have the term *veinulet* introduced. We are also told that the genera *Cardamine* and *Dentaria* are one, taking the older name *Cardamine*. (p. 103) In speaking of hairs (foot-note, p. 104,) it is said, "In the Nettle they are hollow with a bag of poison concealed." Why not tell a reasoning pupil the exact truth which is more wonderful than this fiction? On page 116

the remarkable statement is made that "It will now be seen that from the leaf alone or any fragment of it, the place of the plant in the natural system of classification can be determined." Hardly, with the knowledge at the command of the ordinary pupil.

The casual observer will be at once struck with the extreme *floweriness* of the *style*. Under the description of the Dog-tooth Violet we read; "Spring has come again. The winds blow soft from the West and South over the melting snow-banks. Birds once more fill the air with song, while plants awakened from their winter's sleep, put on their robes of leaf and flower." (p. 29.)

"May, charming May, is the festival of the Roseworts." (p. 104.)

There is one excellent feature of the work, the extreme accuracy of the illustrations. This is not at all surprising when the names of the designers of the majority of the cuts are known, viz: Mr. Isaac Sprague, "the most eminent of living botanical artists," and Mr. J. H. Emerton, the delineator of many of the plates of Eaton's "Ferns of N. A." Some of the figures, however, are evidently by less experienced botanists. The drawings of *Sarracenia purpurea* (p. 159.) and *Pinus Strobus* (p. 215.) are certainly unique.

The Gazette for 1880.—As the December and January numbers of the Gazette will probably appear very nearly together, this seems to be the suitable time to call attention to the beginning of a new volume. The Gazette will enter upon its fifth volume with renewed vigor and greater prospects of success than ever before. It will be the constant aim of the editors to make it as attractive as possible, keeping it in that middle path between dry technicalities that would appall the amateur and foolish quibbling that would disgust the professional. We offer no list of contributors, but would simply ask that the numbers of this volume be looked over with the assurance that there will be no falling off in this respect, but a constant advance. The subscription price will be continued at the same low figure and if a botanist is not willing to pay one dollar for 150 pages of such notes as the Gazette contains, he must be poor indeed. We would ask for the continued patronage of our old subscribers and urge them, if not for our sakes, at least for the common good, to increase the number of our patrons as far as they are able. No sample copies will be distributed at the beginning of the year, as has been the custom formerly, and no numbers will be sent after the subscription has expired. We urge, therefore, that all who expect to subscribe do so at once, that our list may be made and that there may be no awkward break at the beginning of the year. Remember also that if notes accompany a subscription it will be none the less acceptable.—Eds.